

**EFFECT OF DARUHARIDRA AND PUNARNAVA IN HEPATOCELLULAR JAUNDICE:
A CLINICAL STUDY**Ram Bhuwal^{1*}, Pandey Hari Shankar², Dwivedi Kamal Nayan¹¹Department of Dravyaguna, IMS, BHU, Varanasi, U.P. India²Department of Dravyaguna, L. H. State P. G. Ayurvedic College Pilibhit, U.P. India

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ABSTRACT

A clinical study was done on twenty patients of hepatocellular Jaundice. Ghanasatva (water soluble solid) of Daruharidra (*Berberis aristata* DC.) (Root and Stem) and leave juice of Punarnava (*Boerhavia diffusa* Linn.) was given to patients after their enrollment in study. Signs and symptoms of hepatocellular jaundice as yellow colour of eyes, nails, urine and loss of appetite, weakness, nausea, vomiting, fever, epigastric discomfort as well as biochemical assessment was done as GBP, S. bilirubin, S. alkaline phosphate, SGOT, SGPT & HBsAg etc. were recorded before and after treatment. Self control method was adopted in this study, patients of haemolytic and obstructive jaundice and jaundice due to carcinoma of liver, GB, pancreas etc. were excluded from the study. Assessment suggests improvement in patients suffering from hepatocellular jaundice after three months of treatment.

Key words Daruharidra Ghanasatva, Punarnava Juice, Jaundice, Assessment Criteria, Kamala

INTRODUCTION

The word jaundice is derived from the French word "Jaune" which means yellow or yellowish, jaundice is a condition of yellow pigmentation of the plasma, skin, sclera and mucous member due to accumulation of bilirubin in the blood stream.¹

Hepatocellular jaundice results from inability of liver to transport bilirubin into bile, as a result liver cells damage either due to viral infection, hepatotoxic drugs or consumption of alcohol etc.²

All the great Indian laureates viz. Maharshi Caraka, Susruta and Vagbhatta have described the Yakrita Roga (liver disease), Caraka has mentioned a detailed description of Kamala roga in connection with liver disease.^{3,4} He has given details of nidana, samprapti, roopa, bheda, sadhyasadyata and cikitsa karma. The concept of kamala in Ayurveda "Kayam Malyats iti Kamala" The whole body becomes dirty because of accumulation of pitta in the body which refers to accumulation of Bilirubin in this context. Kamala produces various signs and symptoms as haridra netra (yellow coloration of conjunctive), haridratvaka (yellow colour of skin) haridra nakha (yellow colour of nail). Bheka varna (frog like yellow colour of body), daha (burning sensation), avipaka (indigestion), daurbalya (weakness), sudanaruchi (anorexia) etc.⁵

Ayurveda with its tradition of thousands of years mentioned several herbal medicines to cure a number of ailments i.e. liver disorders, skin disorders, cardiac disorders, immune disorders, intellect impairments and degenerative disorders etc. Herbal preparations were very much praised in the treatment of liver disease.

In Ayurvedic classics Kamala has been described as a pitta predominant disorder. Acharya Caraka has mentioned virechana as the best mean for paittika disorders, he has also quoted "Kamali tu Virechanam" the patients of Kamala after unctio should be subjected to mild purgation with tikta drugs.⁶ The drugs Daruharidra and Punarnava both possess tikta kasaya rasa and rasayan properties.⁷ It is supposed that due to tikta rasa, drugs will suppress the vidagdha pitta and due to rasayan properties it will suppress the process of fibrosis and rejuvenat's the damaged hepatocytes.

MATERIALS AND METHODS**Collection and Preparation of Drugs**

The stem bark of Daruharidra was collected from Devalthal, Dist. Pithauragarh, Utranachal. The plant Punarnava was collected from Ayurvedic garden of Lalit Hari State Post Graduate Ayurvedic College & Hospital, Pilibhit, Uttar Pradesh. Daruharidra was cut into

small pieces and dried in the shad. Decoction of the drug was prepared as per as classical method and allowed to condense with milk on mild heat till it become semi solid (ghan satva). Approximately 500 mg of Ghanasatva was filled in empty capsules under clean and hygienic condition.

Total 1.5 mg of Ghanasatva of Daruharidra and 60 ml of leaves juice of Punarnava was given in the patients in three divided dose.

Design of study

Uncontrolled and pilot open labeled clinical trial was designed to screen anti jaundice activity of Daruharidra and Punarnava, study was conducted on 20 numbers of diagnosed patients of jaundice. Patients were selected from OPD and IPD of Department of Dravyaguna and Department of Kayachikitsa of L.H.S. Post Graduate Ayurvedic College and Hospital, Pilibhit (Uttar Pradesh)

Selection of Patients

Patients were enrolled from trial according to inclusion and exclusion criteria. A detailed proforma was prepared to assess the signs and symptoms and findings of laboratory investigations.

Inclusion Criteria

- Patients having signs & symptoms of jaundice with raised S. bilirubin, S. alkaline phosphates, SGPT and with or without presence of Australia antigen.
- Patients willing to participate in trial and signing consent by fulfilling the conditions of proforma.
- Patients were incorporated in study randomly irrespective of religion, region, occupation and family background.

Exclusion Criteria

- Patients of obstructive jaundice (due to cholelithiasis, carcinoma of liver, GB, pancreas etc.)
- Patients associated with other known critical conditions like TB, AIDS, Diabetes mellitus, and cardiovascular diseases.
- Age below 20 years and above 60 years.
- Unwilling to participate or sign consent and not fulfilling the condition of proforma.

Assessment Criteria

A detailed proforma was prepared to assess the signs, symptoms and pathological investigations of the patients during 1st week of treatment and at the last week of treatment separately. Using following criteria's carried out assessment of efficacy.

Clinical assessment – response of drugs on symptoms. It is observed and graded as follows

- Grade –I Excellent response (patients free from sign & symptoms).
- Grade– II Moderate response (full improvement in symptoms and partial improvement in signs).
- Grade – III Mild response (patient improvement in symptoms but no improvement in sign).
- Grade IV Unchanged (No improvement in signs & symptoms).

Biochemical Assessment

Response of drugs on biochemical test as S. bilirubin, S. alkaline phosphate, SGPT etc.

Drugs Administration

Selected patients were given 1.5 gm Ghansatva of Daruharidra and 60 ml leaves juice of Punarnava for three times a day for six months.^{8, 9, 10}

Follow up

- Every patient was assessed for clinical improvement and for adverse effects regularly along with biochemical investigations for the intend before and after the treatment of every 2 to 4 weeks of interval.
- Patients who were irregular or not following prescribed treatment scheduled withdraw from the study.

OBSERVATIONS

Twenty patients were selected (out of Twenty seven, seven were absent) for clinical study and were between 20 to 60 years of age. Majority of patients were from age group of 30 to 40 years of age. Seven out of twenty patients were female.

Number of patients show clinical improvement in individual symptoms in last week of treatment as Anorexia (85%), Weakness (75%), Epigastric discomfort (100%), Fatigue (90%), Constipation (100%), Bodyache (95%), Fever (100%), Hiccough (100%), Nausea (100%), Vomiting (100%), Headache (100%), Loose motion (100%), Loss of libido (95%) (Table 1)^{11,12,13}.

Improvement in signs of jaundice was recorded as shifting in gradations with percent reduction during treatment schedule (100%) improvement was observed as whole as in yellow coloration of Skin, (94.4%) in Yellow coloration Nail, (85%) in Yellow coloration of Conjunctive, (90%) in Yellow Urine, (87.5%) in tender hepatomegaly, (75%) in peripheral oedema, (50%) in splenomegaly. (Table – 2)

Statistical data shows that initial mean with SD score of serum bilirubin was 6.17 ± 6.15. The mean score become 4.50 ± 5.02 after treatment 1 and 2.88 ± 4.35 after treatment 2. The mean difference is 1.67 ± 2.51 and 3.29 ± 3.07 on AT 1 and AT 2 respectively. Statistically the effect of drugs on serum bilirubin found highly significant (p<0.001) Table – 3).

Statistical data shows that initial mean score of SGPT (Serum glutamic pyruvic transaminase) was 136.48 ± 82.87. The mean score become 88.25 ± 54.23 and 62.35 ± 54.73 AT 1 and AT 2, 't' value

4.87 and 6.76 AT 1 and AT 2 respectively. Statistically the effect of drugs on SGPT is highly significant (p<0.001) (Table – 4).

The data shows that initial mean score of serum alkaline phosphate was 21.5 ± 8.57. The mean score become 19.22 ± 7.32 AT 1 and 15.93 ± 6.24 AT 2 respectively. The mean difference was 5.65 ± 4.15 AT 1 and 2.36 ± 3.15 AT 2 respectively. Statistically the effect of drugs on alkaline phosphate is highly significant (Table – 5).

CONCLUSION

On the basis of clinical and biochemical findings the total response of Daruharidra and Punarnava in hepatocellular jaundice has been evaluated and effect has been categorized in two group viz. cured and relieved. The cure group of response has been categorized as complete symptomatic relief along with normalization of altered liver function test, while the patients who showed considerable relief in cardinal sign and symptoms along with normalization of altered liver function test were categorized as relieved group of response.

On behalf of this it is inferred that the test drugs Daruharidra and Punarnava are the most effective, beneficial, cheaper and easily available drugs for the treatment of hepatocellular jaundice.

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Table 1: Effect of drugs on clinical symptoms

S.N.	Symptoms	No. of Pts. BT	No. of Pts. AT 1	No. of Pts. Improved AT 2	% of Pts. Improved
1.	Anorexia	20	03	17	85
2.	Weakness	20	05	15	75
3.	Epigastric discomfort	18	0	18	100
4.	Fatigue	16	02	14	87.5
5.	Constipation	17	03	14	82.5
6.	Bodyache	12	01	11	91.7
7.	Fever	10	0	10	100
8.	Hiccough	10	0	10	100
9.	Nausea	9	0	9	100
10.	Vomiting	7	0	7	100
11.	Headache	3	0	3	100
12.	Loose motion	2	0	2	100
13.	Loss of libido	10	09	09	90

Table 2: Effect of drugs on clinical sign

S.N.	Sign	No. of Pts. BT	No. of Pts. AT	% Improved
1.	Yellow bulbar Conjunctive	20	03	85
2.	Yellow Urine	20	02	90
3.	Yellowish Nails	18	01	95
4.	Yellowish Skin	17	0	100
5.	Tender Hepatomegaly	08	01	87.5
6.	Splenomegaly	02	0	100
7.	Peripheral Edema	04	01	75

Table 3: Effect of drugs on serum bilirubin level

	BT	AT 1	Difference (BT-AT1)	AT 2	Difference (BT-AT2)
Mean	6.17	4.50	1.67	2.88	3.29
S.D. (±)	6.15	5.02	2.51	4.35	3.07
SE	1.38	1.12	0.56	0.97	0.69
t			2.98		4.77
p			<0.001 HS		<0.001 HS

Table 4: Effect of drugs on S.G.P.T. level

	BT	AT 1	Difference (BT-AT1)	AT 2	Difference (BT-AT2)
Mean	136.48	88.25	48.23	62.35	74.13
S.D. (±)	82.87	54.23	44.31	45.73	48.87
SE	18.24	12.13	9.91	10.23	10.93
t			4.87		6.76
p			<0.001 HS		<0.001 HS

Table 5: Effect of drugs on serum alkaline phosphatase level

	BT	AT 1	Difference (BT-AT1)	AT 2	Difference (BT-AT2)
Mean	21.58	19.22	2.36	15.93	5.65
S.D. (±)	8.57	7.32	3.15	6.24	4.15
SE	1.92	1.64	0.70	1.40	0.93
t			3.37		6.08
p			<0.001 HS		<0.001 HS

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